

FIG. 1

Moving laser beam drilling holes in a stationary (stopped) plastic web

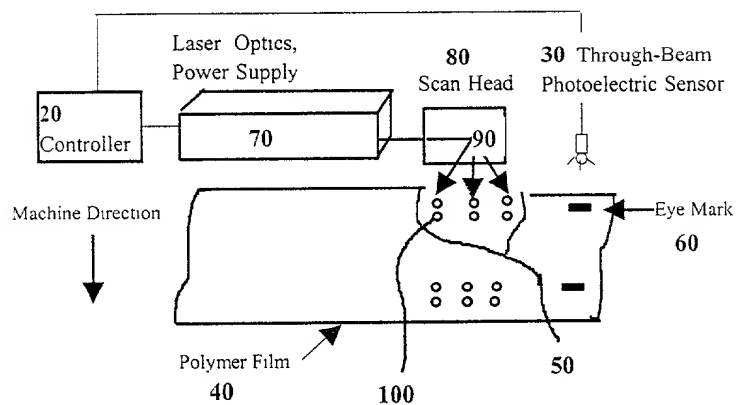


FIG. 2

Example of a bag microperforated with a moving laser beam on a stationary web

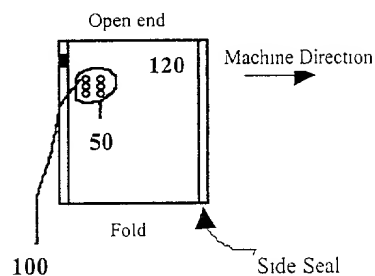


FIG. 3

Stationary laser beam drilling holes in a moving plastic web

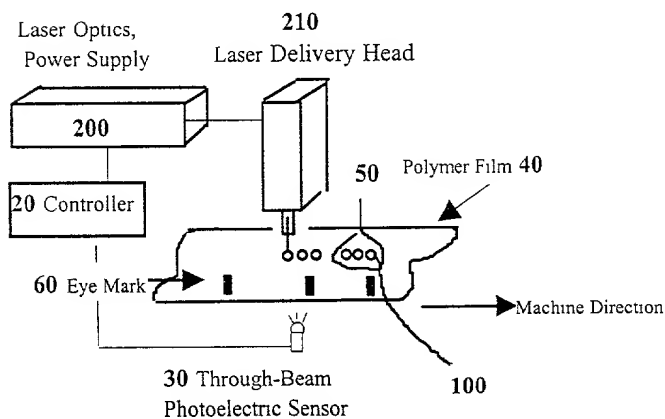


FIG. 4

Example of a bag microperforated with a stationary laser beam on a moving web

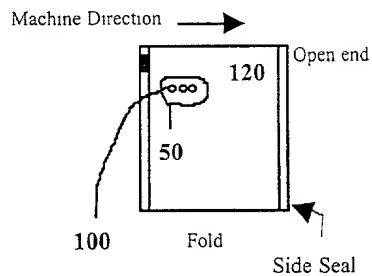


FIG 5

Different shapes of microperforations made in
polymer films with a CO₂ laser

Type I



aspect ratio=1.0-1.2

Type II



aspect ratio >1.2

aspect ratio = $\frac{\text{length of longest diameter}}{\text{length of shortest diameter}}$

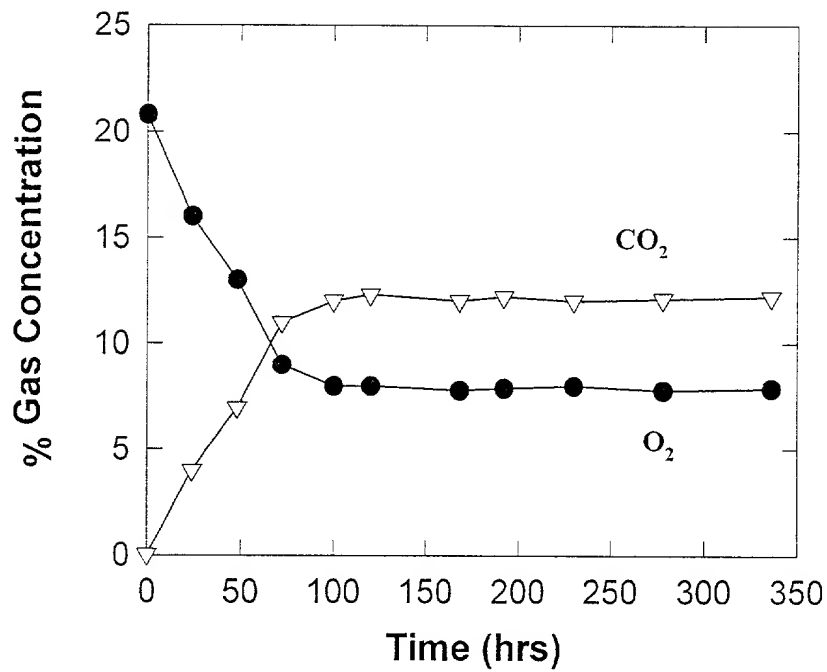


Figure 6. O₂ & CO₂ contents inside 1.36 kg packages of broccoli florets sealed inside microperforated bags having 36, 150-micron perforations. Storage temperature was 4-5 C.

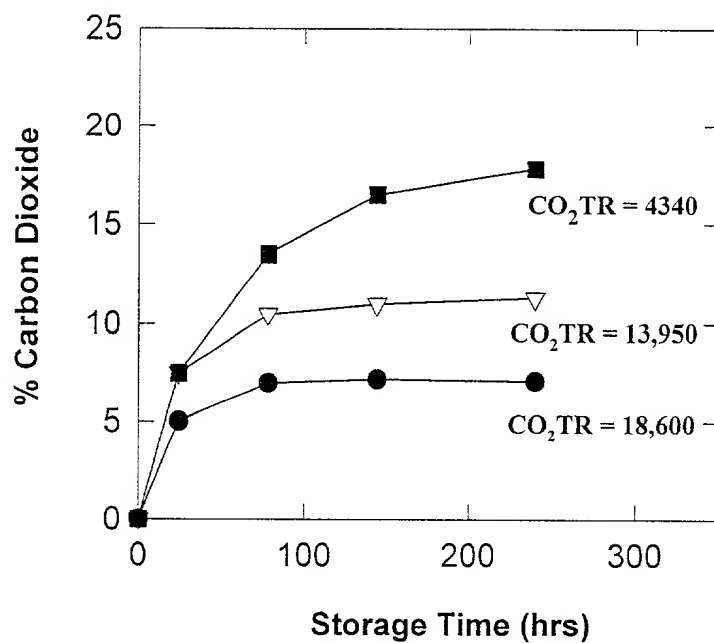


Figure 7. CO₂ content inside 1.36 kg packages of broccoli florets sealed in registered microperforated bags having 36, 150-micron perforations with base packaging films having different CO₂ transmission rates (cc/m²-day-atm). Storage temperature was 4-5 C.